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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,805	08/04/2003	Majid Entezarian	065640-0210	5552

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FOLEY AND LARDNER  
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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

HOPKINS, ROBERT A

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/632,805

**Applicant(s)**

ENTEZARIAN ET AL.

**Examiner**

Robert A Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on preliminary amendment filed 12-16-04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 4,22,24-26,51,52,87,93 and 101 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7-20-04, 11-20-03, 11-12-04, 8-4-03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Continuation of Disposition of Claims: Claims pending in the application are 1,2,4,6,7,9-11,16-26,44-46,49-52,54,55,57-59,61,62,64,78-80,85-89 and 91-106.

Continuation of Disposition of Claims: Claims rejected are 1,2,6,7,9-11,16-21,23,44-46,49,50,54,55,57,58,59,61,62,64,78-80,85,86,88,89,91,92,94-100 and 102-106.

**DETAILED ACTION*****Claim Rejections - 35 USC § 112***

Claims 94,96, and 98 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 94,96, and 98 recite a catalytic converter positioned in the ductwork or kitchen hood. Examiner notes that the preliminary amendment was filed after the original filing date, and examiner cannot locate disclosure of a catalytic converter in the original specification, therefore the claimed subject matter constitutes new matter.

Claims 92-98 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 92 recites means plus function limitations and then recites "using..." in the same claim. Examiner notes that means plus function claims require the specification to provide appropriate structural equivalents for the "means". Therefore, examiner is not sure of the scope of the claim, because a specific structure is recited following the means plus function limitation. Correction is requested. Claims 93-98 depend on claim 92 and hence are also rejected.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 50,54,55,57,58,59,61,62,64 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kiguchi(4105422).

Kiguchi teaches a separation apparatus comprising a plurality of perforated plates(6,7 in figures 10 and 12) which are spaced apart from each other, each of the plurality of perforated plates include collared openings(15,47), wherein the openings in one of the perforated plates are offset from the openings in another one of the perforated plates so that at least a portion of the gas stream passing through the openings of the one perforated plate is deflected before passing through the openings of the another perforated plate. Kiguchi further teaches wherein each of the plurality of plates comprise an open area of approximately 20% to 60%. Kiguchi further teaches wherein the collared openings are tapered. Kiguchi further teaches wherein the collared portion of openings in one plate extend past the collared portion of the openings in the another plate. Kiguchi further teaches wherein the openings are substantially uniformly positioned on the plates, and wherein the openings in the plates are substantially round. Kiguchi further teaches wherein the separation cartridge is configured to be included in a system comprising ductwork coupled to a hood(column 6 lines 61-64), and a fan

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coupled to the ductwork, the fan being configured to move air from the hood through the ductwork and into the atmosphere, wherein the separation cartridge is coupled to the hood.

Claims 85,86,88,89 and 91 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kiguchi(4105422).

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Kiguchi teaches a separation system comprising a kitchen hood( column 6 lines 61-64), ductwork coupled to the hood, a fan coupled to the ductwork, the fan being configured to move air from the hood through the ductwork, and a separation cartridge coupled to the hood, the separation cartridge comprising a plurality of perforated plates(6,7 in figures 10 and 12) which are spaced apart from each other, each of the plurality of perforated plates include protrusions(10,43) which extend outwardly and define openings(15,47) in each plate, the protrusions on one plate extending towards the protrusions on another plate so that the protrusions on one plate and the another plate overlap(see figure 10), wherein the openings in one of the perforated plates are offset from the openings in another one of the perforated plates so that at least a portion of the gas stream passing through the openings of the one perforated plate is deflected before passing through the openings of the another perforated plate. Kiguchi further teaches wherein each of the plurality of plates comprise an open area of approximately 20% to 60%. Kiguchi further teaches wherein the collared openings are tapered. Kiguchi further teaches wherein the openings are substantially uniformly positioned on the plates

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1,2,6,7,9-11,16-21,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrer(3955949) taken together with Brownell et al(6797041).

Rohrer et al discloses a separation cartridge comprising a baffle filter(10) and a grease filter positioned adjacent to the baffle filter, wherein the cartridge is used to separate one or more entrained substances from a gas stream in a kitchen hood system. Rohrer et al is silent as to a packed bed of porous inorganic particles positioned adjacent to the baffle filter. Brownell et al discloses a kitchen hood system, wherein a baffle filter(18) and a packed bed of porous inorganic particles(22) are arranged in series within the hood. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a packed bed of porous inorganic particles for the mesh grease filter of Rohrer so that grease and other particles suspended in the air impinge against the particles and are absorbed into the interstices of the filter media during normal operation, and so that gaps between adjacent particles are free of dirt, thereby enabling air to easily pass through the filter without producing a significant pressure drop across the chamber walls(column 8 lines 10-17 of Brownell et al). Brownell further discloses wherein the particles comprise at least one of a ceramic material or a metal(column 7 lines 63-67). Brownell et al further discloses wherein a majority of the particles are approximately 0.1 mm to approximately 10 mm in size. Brownell et al further discloses wherein the particles are a plurality of sizes. Brownell et al further discloses wherein the particles comprise an exterior surface and a plurality of channels(124) that open into the exterior surface and define interior surfaces. Brownell et al further discloses wherein the channels comprise a mean size of approximately



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0.01 microns to approximately 100 microns, and wherein the particles are approximately 15% porous to approximately 70 percent porous. Rohrer taken together with Brownell et al disclose wherein the baffle filter is in contact with the packed bed. Rohrer further discloses wherein the hood system is used to vent the gas stream into the atmosphere. Rohrer further discloses a frame(channels 13 and 15) which is used to hold the baffle filter and packed bed together. Rohrer further discloses wherein one or both of the baffle filter or the packed bed is configured to be easily removed from the frame. Rohrer further discloses wherein the frame encloses the baffle filter and packed bed.

Claims 44-46,49, and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrer(3955949) taken together with Brownell et al(6797041).

Rohrer discloses a separation cartridge comprising a plurality of adjacent separation mediums, wherein the separation cartridge is used to separate an entrained substance from a gas stream in a kitchen hood system. Rohrer is silent as to including a packed bed of porous inorganic particles. Brownell et al discloses a kitchen hood system, wherein a baffle filter(18) and a packed bed of porous inorganic particles(22) are arranged in series within the hood. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a packed bed of porous inorganic particles for the mesh grease filter of Rohrer so that grease and other particles suspended in the air impinge against the particles and are absorbed into the interstices of the filter media during normal operation, and so that gaps between adjacent particles are free of dirt, thereby enabling air to easily pass through the filter without producing a significant pressure drop across the chamber walls(column 8 lines 10-17 of Brownell et

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al). Rohrer further discloses wherein the cartridge includes only two separation mediums. Rohrer further discloses wherein at least one of the plurality of separation mediums comprises a baffle filter. Rohrer further discloses wherein the kitchen hood system is used to vent the gas stream into the atmosphere.

Claims 78-80, and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrer(3955949) taken together with Brownell et al(6797041).

Rohrer discloses a separation system comprising a kitchen hood(12), ductwork(no shown) coupled to the hood, a fan(not shown) coupled to the ductwork, the fan being used to move air from the hood through the ductwork and into the atmosphere, and a separation cartridge coupled to the hood, the separation cartridge including a plurality of separation mediums, the plurality of separation mediums used to separate one or more entrained substances from the air, and a frame(13,15) configured to hold the separation mediums. Rohrer is silent as to including a packed bed of porous inorganic particles. Brownell et al discloses a kitchen hood system, wherein a baffle filter(18) and a packed bed of porous inorganic particles(22) are arranged in series within the hood. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a packed bed of porous inorganic particles for the mesh grease filter of Rohrer so that grease and other particles suspended in the air impinge against the particles and are absorbed into the interstices of the filter media during normal operation, and so that gaps between adjacent particles are free of dirt, thereby enabling air to easily pass through the filter without producing a significant pressure drop across the chamber walls(column 8 lines 10-17 of Brownell et al). Rohrer

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further discloses wherein the separation mediums are capable of being easily removed from the frame, and wherein the separation mediums include a baffle filter.

Claim 92 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrer(3955949) taken together with Brownell et al(6797041).

Rohrer teaches a first means for separating an entrained substance from a gas stream in a kitchen hood, and a grease filter in a kitchen hood, and a frame configured to hold the first means and the grease filter. Rohrer is silent as to a second means for separating an entrained substance from a gas stream. Brownell et al discloses a kitchen hood system, wherein a first means(18) and a second means(22) are arranged in series within the hood. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a second means for the grease filter of Rohrer so that grease and other particles suspended in the air impinge against the particles and are absorbed into the interstices of the filter media during normal operation, and so that gaps between adjacent particles are free of dirt, thereby enabling air to easily pass through the filter without producing a significant pressure drop across the chamber walls(column 8 lines 10-17 of Brownell et al).

Claims 99,100,102-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohrer(3955949) taken together with Brownell et al(6797041).

Rohrer discloses a separation cartridge comprising a baffle filter(10) and a grease filter(16) positioned adjacent to the baffle filter. Rohrer is silent as to a bed of particles positioned adjacent to the baffle filter. Brownell et al discloses a kitchen hood system, wherein a baffle filter(18) and a packed bed of porous inorganic particles(22)

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are arranged in series within the hood. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a packed bed of porous inorganic particles for the mesh grease filter of Rohrer so that grease and other particles suspended in the air impinge against the particles and are absorbed into the interstices of the filter media during normal operation, and so that gaps between adjacent particles are free of dirt, thereby enabling air to easily pass through the filter without producing a significant pressure drop across the chamber walls(column 8 lines 10-17 of Brownell et al). Brownell further discloses wherein the particles comprise at least one of a ceramic material or a metal(column 7 lines 63-67). Brownell et al further discloses wherein the particles are solid. Rohrer taken together with Brownell et al further discloses wherein the baffle filter is in contact with the packed bed.

***Allowable Subject Matter***

Claims 4,22,24-26,51,52,87,93,101 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 recites "wherein the packed bed is pleated." Brownell et al discloses a packed bed of three separate and connected structures. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a pleated packed bed because Brownell et al does not suggest such a modification.

Claim 22 recites "wherein the baffle filter, the packed bed, and the frame are fixedly coupled together". Rohrer discloses a baffle filter and a secondary filter removably arranged within a frame. It would not have been obvious to someone of

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ordinary skill in the art at the time of the invention to provide wherein the baffle filter, the packed bed, and the frame are fixedly coupled together because Rohrer does not suggest such a modification.

Claim 24 recites "wherein the baffle filter is configured to be received by upper and lower railings in the hood system and the packed bed is configured to protrude outward from a plane defined by the upper and lower railings. Rohrer discloses a baffle filter and a secondary filter removably arranged within a frame of upper and lower railings. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein the baffle filter is configured to be received by upper and lower railings in the hood system and the packed bed is configured to protrude outward from a plane defined by the upper and lower railings because Rohrer does not suggest such a modification. Claim 25 depends on claim 24 and hence would also be allowable upon incorporation of claim 24 into claim 1.

Claim 26 recites "wherein a height of a first portion of a side of the cartridge is greater than a height of a second portion of the side of the cartridge". Rohrer discloses a baffle filter and a secondary filter removably arranged within a frame of upper and lower railings. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein a height of a first portion of a side of the cartridge is greater than a height of a second portion of the side of the cartridge because Rohrer does not suggest such a modification.

Claim 51 recites "further comprising: a separation medium positioned adjacent to the plurality of plates". Kiguchi fails to teach a separation medium positioned adjacent

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to the plurality of plates. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a separation medium positioned adjacent to the plurality of plates because Kiguchi fails to suggest such a modification. Claim 52 depends on claim 51 and hence would also be allowable upon incorporation of claim 51 into claim 50.

Claim 87 recites "a packed bed positioned adjacent to the first and/or second plates". Kiguchi fails to teach a separation medium positioned adjacent to the plurality of plates. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a separation medium positioned adjacent to the plurality of plates because Kiguchi fails to suggest such a modification.

Claim 93 recites "wherein the plurality of adjacent separation mediums includes a mesh filter". Rohrer taken together with Brownell et al disclose a baffle filter adjacent to a porous inorganic filter. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein the plurality of adjacent separation mediums includes a mesh filter because Rohrer taken together with Brownell et al does not suggest such a modification.

Claim 101 recites "wherein the bed is pleated." Brownell et al discloses a packed bed of three separate and connected structures. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a pleated bed because Brownell et al does not suggest such a modification.

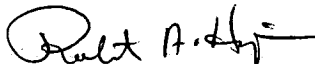
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RAH  
February 3, 2005

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
A.U. 1724